LIBRARY OF CONGRESS
PERIODICAL DIV
JAN 6 1912

Index to Volume XXVII

311
884
D

JULY TO DECEMBER

1911

The Journal of Electricity, Power and Gas

Published by the Technical Publishing Company

San Francisco, California

TK1
.E495

Authors' Index

	Page
Allen, F. B.	152
Baldwin, L. H.	69
Barbour, F. F.	431
Brittain, Jos. J.	252
Brockett, Norwood W.	378, 430
Burdick, R. H.	486
Byllesby, H. M.	11
Charters, S. B.	431
Chevalier, R. F.	351, 347
Cory, C. L.	275, 301, 432, 524
Cottrell, F. G.	165
Crane, R. T.	533
Crozier, H. W.	530
Cunningham, E. S.	120
Damon, Geo. A.	571
Denison, F. C.	189
Dorr, W. J.	487
Durand, W. F.	9
Du Val, W. M.	271
Elliott, Albert H.	555
Elwell, C. F.	473, 573
Fanning, B. E.	620
Fernald, Robert H.	585
Fisken, John B.	535
Forney, C. S.	326
Foster, Wallace H.	485
Frazer, C. L.	117
Grover, Sherwood	487
Gunn, Arthur	553
Hall, Wm. L.	187
Halloran, A. H.	389, 431, 545
Hansen, J. H.	501, 597
Henry, Geo. J.	501, 599
Hess, F. H.	484
Hibgen, M.	55
Hodge, Jr., W. H.	346
Homberger, H.	597
Huggins, C. N.	378
Hunt, C. M.	328
Jacobs, Gaskell S.	1, 72
Johnson, F. S.	147
Jollyman, J. P.	34, 597
Jones, E. C.	297
Jorgensen, Lars	573
Kistler, L. A.	95
Lamme, W. F.	573
Lane, H. S.	95
Leach, Frank W., Jr.	269
Lee, Chas. H.	23
Lisberger, S. J.	573
Loomis, F. W.	122, 168
McAdie, Professor A. G.	427
McMicken, A. C.	462
Maxwell, Hu	187
Mead, D. W.	13
Mel, W. B.	212
Metz, E. C.	117
Morgan, W. R.	485
Pender, Harold	48
Percy, E. N.	588, 563
Phillips, Chas. T.	583
Platt, F. C.	95
Scherer, James A. B.	478
Schneider, G. A.	88
Scott, W. D.	549
Sibley, Robert	103, 157, 458, 481, 506, 530
Smith, G. O.	139
Sooy, Francis A.	72
Steinmetz, C. P.	57
Thelen, Max	369, 430
Thompson, H. F.	48
Twomey, L. S.	4, 221
Van Norden, Rudolph W.	411
Vincent, Jr., W. G.	431
Wade, F. S.	294
Whitney, R. M.	169
Williams, Harrison	365
Wilson, J. C.	339
Wolf, August	212, 219
Woods, B. F.	184
Wright, Hamilton	261
Young, D. J.	273, 474
Young, D. J.	484

Index to Volume XXVII

Illustrated articles are designated by an asterisk (*), editorial by (†), and industrials by double dagger (‡).

Page

A

*Abandonment of Steam, United Railroads' 135
†Accident Compensation for Workman 37
Accidents in Mines, Some Suggestions to Prevent Electrical....570
Accounting in Connection with National and State Legislation....378
†Activity, Good Roads 170
Activity in Inland Empire, Electrical 347
Activity in Northern California, Electrical 229
*Activity in Southern California, Great Electrical 224
*Advertising, Attractive 252
†Advertising Electricity 358
Advertising Gas and Electric Service 346
*Advertising in Los Angeles, Clever 509
*Aeroplane, Centrifugal 128
†Aesthetic Side of Engineering Structure 434
Agency Arrangements, Change in.626
Agriculture, Electricity in.....289
‡*Agutter-Griswold Co.'s New Factory 338
A. I. E. E. Meeting for November in Los Angeles 446
A. I. E. E. Meeting of Seattle Section 293
A. I. E. E. San Francisco Section 368, 501
*Air-Brake Apparatus 151
*Air-Compressor 233
*Alarm System, A Modern Fire....497
*Alternating Current Circuits, Application of a System of Graphics to 454
‡*Alternating Current Transmission Line Calculator 152
*Altitude in the Sierras, Precipitation and 23
†Amendments, Public Lands Necessary 148
Amendments to Mineral Laws, Necessary 139
†Amendment No. 47, California's Proposed 334
American Exports 294
American Railway Statistics 253
†Anaconda Mining Company, Electric Power 149
†And Why Not?.....511
‡Annual Meeting of Westinghouse Elec. & Mfg. Co.....175
Annual Report—Commissioner of Patents 117
†An Old Fault 464
*Apparatus, Air-Brake 151
Appliances for Western Canada, Electrical 246
†Application High Frequency Tests. 84
*Application of a System of Graphics to Alternating Current Circuits 454
"Applied Electricity, Practical"..100
Appraisals, Responsibilities of Electrical Engineers in Making. 11
†Appraisement, New Methods of Land 58
Aqueduct Tunneling Nearly Completed, Los Angeles 585
‡*Arch Type of Cellular Dam, Multi-Differential 603
‡*Arcing Rings on Transmission Lines, Protective 384
‡*Arc Lamps, New Long Life Flame 384
Argentina, Electrical Enterprise in 401
†Arithmetic, Some Simple.....489
Arithmetic, Some More 622
Arizona, Census Returns for Power and Fuel in 229
†As to Rate Reductions..... 84
*Atmosphere, Charts of the.....427
†Atmosphere, Charts of the.....434
†Attitude of a Public Service Corporation Man 308
*Attractive Advertising 252
Austria-Hungary, Water Power Development in 252
*‡Automatic Controllers for Motor-Driven Machinery 468
*Automobile Drip Wagon 485
*Automobiles, A Treadmill for....485

B

*Balanced Valve 193
Bamboo Wood, Engineering Application of 138
Baseball Game, Annual "Jollyup".106
Baseball Game 437
Batteries, Annual Value of.....246
‡*Batteries, Connector Puller for Disconnecting Vehicle 439
‡Battery, A New Moisture-Proof Dry 130
*Battery Installation at Goldfield Mine 609
*Bevel, Protractor and Rule, Combined 39
Bids for Electric Cars 505
Bids for Manila Gas Franchise..401
*Big Meadows Dam 287
†Big Meadows Dam, The.....309
*Billiard Table Lighting.....168
†Boiler Efficiencies 334
*Boiler, Evaporative Tests on a Water Tube 315
‡Boiler Flow Meter, New Indicating 19
Boiler Rules, Standard 504
*Boilers, Water-Feed, Heater and Purifier for Steam 128
*Boiler, Water-Tube 18
Bonuses for Memphis Employes..142
Book Reviews 100, 130, 283, 337, 383, 493
*Bowling Alley Lighting.....122
*Boxes, Lock for Fire-Alarm.....107
*Brake Apparatus, Air.....151
Brazil, Hydroelectric Enterprises in 377
*Breaking of Snow Blockades in Northwest 505
‡*Bridging vs. Shunting of Railway Motors 108
Briquetting of Lignite 35
British Columbia, Telephone Train Dispatching in 183
*‡Buffalo Grip, A New Locking Feature for 19
Bureau of Mines, Demonstrations of the U. S. 248
Bureau of Mines, Electrical Section 101
†Bureau of Mines, Electrical Section of the 104
Bureau of Mines, Specifications for Purchase of Fuel Oil by.....146
Bureau of Standards, Examination for Appointment to 357
*Burner, Crude-Oil 18
*Burner, Hydrocarbon 233
*Burner, Oil 107, 233
Burning of an Electrically Operated Gold Dredge 523
*Burning Oil 563, 588
*Burning Oil 563, 588, 613
Business, The Cost of Doing 620
Butte, Compressed Air in Mines of.401

C

Cable Road Electrically Operated.135
*Calculating Illumination, Methods of 4
Calculation of Sags in Transmission Lines 49
‡*Calculator, Alternating Current Transmission Line 152
*California Contractors Camp at Catalina 91
*California Edison Co.'s Long Beach Power Plant, Southern 389
California, Electrical Activity in Northern 229
*California, Great Electrical Activity in Southern 224
*California, Heating Plant at University of 199
‡California Isn't Alarmed, Why..561
California Mine Production in 1910 293
California Municipalities League Meeting 405
‡*California Municipalities, 14th Annual Convention and Municipal Exhibit of the League of.....469
California Oil Industry 206
†California Public Service Commission 557
†California's Proposed Amendment No. 47 334
†Call of the Engineer, The.....403
*Calorimetry 227
Calorimetry and Thermometers..225
‡Calorized Electric Soldering Iron.561
Canada, Electrical Appliance for Western 246
Canada, Fuel-Oil and Petroleum Industry in 147
Canadian Rockies, Public Road Building in 189
Canal Work in August 457
Canal Work in October 523
*Carbon By-Product of the Oil Gas Process, Mechanical Handling..273
‡*Car for San Francisco Railroad, Gas-Electric 174
†Cars, P. A. Y. E..... 36
Catalogues, New.....20, 60, 86, 109, 127, 130, 195, 216, 232, 256, 312, 362, 405, 437, 469, 491, 542, 581.
*Calalina, California Contractors Camp at 91
Catenary, Graphical Solution of.. 49
*Cattle-Guard Causeway, Railway.173
*Causeway, Railway Cattle-Guard.173
Cedar Poles, Test of Western....552
Cedar, Western Red.....187
Cement as an Iron Preservative..253
Census Returns for Power and Fuel in Arizona 229
Census Statistics on Gas, Illuminating and Heating 509
Central Station Commercial Problems 462
Central Station Distribution Systems, Electric 493
Central Station, "New Business" Method for the Small 553
*Central Station Plants Versus Isolated 179
†Central Station vs. Isolated Plant.191
*Centrifugal Aeroplane 128
‡*Chafing Dishes and Frying Pans, Westinghouse Electric 581
Characteristics of Transmission Lines 47
*Charts of the Atmosphere.....427
†Charts of the Atmosphere.....434
†Charts of Transmission Lines.... 58
Chelan Dam Site Unsatisfactory.573
Chimney Draft and Design.....396
China, Telegraph Extension in.... 34
China, Weather-Proofed Electric Cable for 30
Chinese Irrigation Pumps..... 56
‡*Chucks, Magnetic 283
‡*Cigar Lighter, A New Electric....407
‡*Circuit Breakers, Kelman Oil Switches and 257
*Circuits, Polarity in Polyphase Current 447
Citizenship and the Engineer....478
City Ablaze with Myriad Lights..169
*City Pumping Plant, Motor Driven 1
†City's Traffic Struggle, A.....281
†Clearing House for Trouble, A..510
*Clever Advertising in Los Angeles.509
*Cluster, Electric-Lamp 61
Code of Engineering Ethics.....121
Codling Moth and Electricity in the Great Northwest 206
*Coleman Plant, The 411
†College Engineering Thesis 125
Coltano Wireless Telegraph Station 587
*Combined Bevel Protractor, and Rule 39
*Combustion Engine, Internal.....233
Commercial Problems of the Central Station 462
Commercial Woods of the United States 401
†Commission, California Public Service 557
Commissions, Discussion Papers on Compressed Air in Mines of Butte.401
Public Service 430
Commissions, Public Service.....369
†Community of Spirit, Technical Editors' 148
*Compensation Act for Washington, Workman's 10
†Compensation, Workman's Accident 37
Complimentary Lunch to Philip S. Dodd 461
‡*Composite Telephone Sets.....194
*Compressor, Air 233
Compulsory Wireless for Vessels. 9
Computations, Quick Checks for Engineering 184
Concrete at Panama, Cost of..... 21
Conductors, Medals for 183
Conduits, On the Control of Surges in Water 9
Congress at Panama-Pacific Exposition, 1915 International Electrical 222
‡*Connector Puller for "Exide" Vehicle Batteries 439
*Construction of Wharf or Seawall. 61

Page

Contract Forms for Ornamental Street Lighting Agreements, Model 122
Contractors' Notes, Electrical .... 20, 126, 150, 172, 192, 214, 256, 282, 337, 360, 382, 405, 437, 467, 491, 513, 539, 580, 602.
*Contractors Camp at Catalina, California, Electrical 91
Contractors Organize, Oregon 559
†Control in Los Angeles, Economic Distribution 465
*‡Controllers for Motor-Driven Machinery, E. C. & M. Automatic..468
†Control, Municipal vs. State-Wide.435
Control of Surges in Water Conduits 9
‡*Convention and Exhibit of the League of California Municipalities 469
*Convention of Northwest Electric Light & Power Association..78, 322
‡*Convention of Electric Storage Battery Co 560
Convention Pacific Coast Gas Association, Nineteenth Annual....268
†Conventions Pacific Coast 254
‡*Converters for Mining Service....361
‡*Converters, 3000 Kilowatt Rotary.542
Co-operation 555
†Coronation, Echoes of the....104
Corporation Educational Clubs in Northwest, Investigation of....535
†Corporation Man's Attitude, A Public Service 308
*Cort Theatre, Electricity in the.584
Cost of Concrete at Panama.... 31
Cost of Doing Business 620
Cost of Electric Oil Pumping....568
*Cost per Acre Foot of Small Electrically Driven Pumping Plants.117
Costs, Electrification 103
†Crane, A Reply to Richard T.....537
*Crude-Oil Burner 18
Crude Oil Production 400
†Crude Petroleum 212
Crude Petroleum Production....569
*Crusher, Rock 87
Culebra Cut at Panama, Erosion of Slopes of 47
Culebra Cut, Transportation Record in 251
*Culvert Structure 87
Current Transformers, Iron Loss in 373
‡Cutler-Hammer Feed-Through Switch 561
"Cyclopedia of Telephony and Telegraphy" 383

D

†Dam Failures 488
*Dam, Highest Rock-Fill 519
‡*Dam, Multi-Differential Arch Type of Cellular 603
Dam Site Unsatisfactory, Chelam..573
*Dam, The Big Meadows 287
†Dam, The Big Meadows....302
†Danger of Public Operation of Public Utilities 578
†Data, Watershed 37
‡*Decorations, Electrical Floral....560
Definition of Horsepower 164
Demonstration, Mine Safety....222
Demonstrations of the U. S. Bureau of Mines 248
Department of Electricity, for Manila 187
†Depreciation 105
"Design of Static Transformers, The" 493
*Despatching on the Northern Electric, Train 69
*Device, Loading 107
"Diagrams, Straight Line Engineering" 130
†Diagrams, Vector 464
"Direct and Alternating Current Manual" 493
*Direct Current Transmission, High Tension 473
"Directory of California Securities" 130
*Discharge Apparatus, High-Tension 39
‡*Disconnecting Switches, Pneumatically Operated 40
Discussion 573
Discussion, High Tension Direct Current Transmission 573
Discussion "Methods of Calculating Illumination 78
*Turbines, Discussion on Francis.597
Discussion on Public Service Commissions 430
‡*Distributing Transformers, Improvements in 234
†Distribution Control in Los Angeles, Economic 465
"Distributing Systems, Electric Central Station" 493
Distribution, High Pressure Gas..326

Page

*Ditch Construction, Short-Cut in Estimating Excavation of Yardage in 222
*Ditching, Steam Shovel for.... 31
Dodd, Complimentary Lunch to Philip S. 461
*Donkey Engines, Electrically Driven 219
Douglas Fir, Properties and Uses of 32
*Drainage Map of Sierra Nevada Mountains 24
Draft and Design of Chimneys...396
*Dredge 61
Dredge, Burning of an Electrically Operated Gold 523
*Dredging Apparatus, Hydraulic... 39
*Drip Wagon, Automobile 485
*Driving Dynamos from Variable and Non-Variable Sources of Power 39
‡Dry Battery, A New Moisture-Proof 130
*Dynamo Driving from Variable and Non-Variable Sources of Power 39
Dynamos, Annual Value of Manufacture 246

E

†Echoes of the Coronation....104
†Economic Distribution Control in Los Angeles 465
*‡E. C. & M. Automatic Controllers for Motor-Driven Machinery...468
†Editors' Community of Spirit, Technical 148
Educational Clubs in Northwest, Investigation of Corporation...535
†Educational Value of the Journal.190
†Efficiencies, Boiler 334
*Elbows in Pipe Line, Water Measurement by Use of 72
‡*Electric Gas Car for San Francisco Railroad 174
Electric Cars, Bids for....505
"Electric Central Station Distribution Systems" 493
Electric Company in Tokio, New..493
†*Electric Cigar Lighter, A New..207
‡Electric Equipments in a Newspaper Plant 439
†Electric Fatalities 622
†Electric Gas Meters 255
*Electric Gas Meter Test....239
*‡Electric Glue Heating Appliances.406
*Electric Heater 18
‡*Electric Hot Plate, New....438
*Electric-Lamp Cluster 61
*Electric-Lighted Finder 18
Electric Line, Philippine 246
‡*Electric Locomotives for T. H., I. & E. Traction Co. 312
‡*Electric Locomotive of Portland, Grey & Lewiston Ry. Co....406
‡*Electric Oil Heater....438
Electric Oil Pumping, Cost of....568
†Electric Power Anaconda Mining Company 149
Electric Power from India's Rainfall 120
"Electric Railway Manual, McGraw" 283
Electric Safety Lamp, Grand Prize for 206
Electric Service, Advertising 346
‡Electric Sign Projector, Improved Stencils for the 312
‡*Electric Storage Battery Co. Convention 560
"Electric Traction and Transmission Engineering" 383
Electric Zinc Smelting 612
Electrical Accidents in Mines, Some Suggestions to Prevent 570
Electrical Activity in Inland Empire 347
Electrical Activity in Northern California 229
*Electrical Activity in Southern California 224
*Electrical Activities in Spokane..445
Electrical Appliances for Western Canada 246
Electrical Assistant, Examination for 362
Electrical Congress at Panama-Pacific Exposition, 1915, International 222
Electrical Contractors' Notes.... 20, 126, 150, 172, 192, 214, 256, 282, 337, 360, 382, 405, 437, 467, 491, 513, 539, 580, 602.
Electrical Development League First Meeting 580
*Electrical Distribution, System of of.... 61
Electrical Engineering, Some Unexplored Fields 57
Electrical Engineers, Responsibilities in Making Appraisals 11

Page

Electrical Enterprise in Argentina.401
*Electrical Equipment Long Beach Power Plant 389
*Electrical Features, Panama-Pacific Exposition 261
‡*Electrical Floral Decorations....560
†Electrical Industry, Trend of....255
Electrical Jobbers at Portland....293
Electrical Luncheon, A Get-Together 490
"Electrical Machinery, Testing of".493
Electrical Men's Lunch 559
Electrical Men Plan a Clearing House 539
*‡Electrical Repair Shop, A Modern.492
*Electrically Driven Donkey Engines 219
*Electrically Driven Pumping Plants—Cost per Acre Foot of..117
Electrical Machinery and Apparatus 246
*Electrically Operated Cable Road.135
*Electrical Operation of the West Jersey & Seashore Railroad....184
*Electrical Precipitation of Suspended Particles 165
Electrical, Production of Pig Iron.146
†Electrical Section of the Bureau of Mines 104
Electrical Section of the Bureau of Mines Its Purpose and Some Fruitful Results 101
‡Electrical Works, Farnsworth....175
†Electricity, Advertising 358
Electricity and the Codling Moth in the Great Northwest....206
Electricity in Agriculture 289
*Electricity in the Cort Theatre...584
†Electricity in Mining 622
†Electricity in Oil Production 622
Electricity on the Sunset Limited.559
Electricity, Latest Triumph of....400
"Electricity, Practical Applied"...100
Electricity, Production of Pig Iron by 400
Electrification Costs 103
Electrification, Swiss Railroad...229
†Electroller Law, The 556
†Electrolysis of Teredoes 622
"Electro-Magnetic Machinery and Other Apparatus(Testing of"..130
*Electropneumatic Photo-Exposure Apparatus 193
Elements of Forced Draught....423
†Elevator Bill 600
*Empirical Formulae, How to Make Up 458
Employes Bonuses for Memphis..142
*Engine, Internal Combustion....233
*Engine, Rotary 193
*Engine, Rotary Internal-Cumbustion 87
Engineer and Citizenship, The....478
†Engineer, Recognition of the....557
†Engineer, The Call of the....403
Engineering and Public Work....460
*Engineering, An Optical Illusion in 103
Engineering Application of Bamboo Wood 138
Engineering Computations, Quick Checks for 184
"Engineering Diagrams, Straight Line" 130
Engineering Ethics, Code of....121
Engineering Details of Long Beach Power Plant 396
"Engineering, Electric Traction and Transmission" 383
Engineering, Farm 354
Engineering Opportunities with Foreign Neighbors 210, 213
Engineering, Some Unexplored Fields in Electrical 57
†Engineering Structure, Aesthetic Side of 434
†Engineering Thesis, College 125
†Engineer's Relation to Teaching .. 59
*Engines Electrically driven Donkey 219
Engines for Ships, Oil 187
*Engines, Starting System for Gas.173
†Enterprise, Western 36
*Entropy Tables and the Rankine Cycle 530
†*Equipments of Toledo, Bowling Green & Southern Traction Co., New 514
Erosion of Slopes of Culebra Cut at Panama 46
*Estimating Excavation of Yardage in Ditch Construction, A Short-Cut in 222
Ethics Code of Engineering....121
*Evaporative Tests on a Water Tube Boiler 315
Examination for Appointment to Bureau of Standards 357
Examination for Electrical Assistant 362
*Excavation of Yardage in Ditch Construction, Short-cut in Estimating 222

Page

*Excavator, Power-Driven Post-Hole 193
Exhibit of H. W. Johns-Manville Co. 384
†Exhibit of Westinghouse Co. at Atlantic City 439
‡*Exhibit on Steam Launch....312
*Expansion, Simple Laws of....506
Experience, Gas 400
*Experiments on Increase of Wind Pressure on Small Wires.... 95
†Expert for San Francisco, Traffic.230
Exports, American 294
*Exposition, Los Angeles Electrical.540
†Exposition Site 58
*Exposition Site Transportation Facilities 113
†Exposition, Transportation Facilities Panama-Pacific 124

F

*Facilities for Transportation at Exposition Site 113
†Facilities Panama-Pacific Exposition, Transportation 124
‡*Factory Location, Lighting a.... 40
†Failures, Dam 488
†Fair, Ground Breaking World's...381
Farm Engineering 354
‡Farnsworth Electrical Works....175
†Fatalities, Electric 622
†Fault, An Old 464
*Finder, Electric-Lighted.... 18
Fir, Properties and Use of Douglas 32
*Fire Alarm Boxes, Lock for.....107
*Fire Alarm Box Keys, Guard for.107
*Fire Alarm System Test....141
*Fire Alarm Installation, A Modern.497
†Fixing, Rate 536
‡*Flame Arc Lamps, New Long Life. 384
‡*Floral Decorations, Electrical....560
‡Flow Meter, New Indicating Boiler. 19
Flow of Streams and the Factors that Modify It 13
‡Flue Gas Temperatures, Convenient Means for Determining....406
*Flume Gate 151
Fog Signals, Hertzian Waves as..246
Foreign Neighbors, Engineering Opportunities With 210, 213
Foreign Notes 126
Franchise at Public Auction, Philippines 183
Franchise, Bids for Manila Gas..401
†Franchise Granting 601
*Francis Turbines, Discussion on..597
Fraudulent Oil Entries 222
†Freight Traffic of the Interurban. 85
†Frequency Tests, Application High. 84
‡*Frying Pans, Westinghouse Electric Chafing Dishes and....581
Forced Draught, Elements of....423
*Formulae, How to Make up Empirical 458
Fuel in Arizona, Census Returns for Power and 229
Fuel Oil and Petroleum Industry in Canada 147
Fuel, Nile Sudd as 401
Fuel Oil Specifications....146
*Fuel Press 128
Futility of Technical Schools....533

G

Gas and Electric Service Advertising 346
Gas Association, Pacific Coast 220
Gas Distribution, High Pressure..326
‡*Gas-Electric Car for San Francisco Railroad 174
*Gas Engines, Starting System for.173
Gas Franchise, Bids for Manila...401
Gas, Illuminating and Heating, Statistics on 509
Gas, Instable Hydrocarbons in Illuminating 297
*Gas Manufacture and Distribution, The Naphthalene Problem in Oil 294
†Gas Meters, Electric 255
Gas Meter, The 271
*Gas Meter Test, An Electric....239
Gas Power Field for 1911....585
*Gas-Purifier 173
Gas Service, Rates for....276, 301
Gas Temperatures, Convenient Means for Determining Flue...406
*Gas, Test for Naphthalene in Illuminating 486
*Gas, Water and Oil Wells, Packer for Operating 193
*Gas Works, Device for Handling Lubricating Oils in Small....484
Gases, Laws of So-Called Perfect.290
*Gate, Flume 151
†Gathering Statistics 358
Gatun Locks, Work North of....142
†General Electric Co. 1911 Progress.625
Generating Plants at Victoria Falls 294

Page

‡*Generating Unit, Household....109
*Generator, Steam 233
Get-Together Electrical Luncheon.490
‡*Glue Heating Appliances, Electric.406
Golf, Jobbers Play 513
*Goldfield Storage Battery Installation 609
†Good Roads Activity 170
†Good Roads, A Word on....488
Four—Index—Journal of Electricity
‡*Grain Mill, Motor Driven....283
*Graphics Applied to Alternating Current Circuits....454
Great Falls Power Company's Transmission System 55
Great Western Power Co.'s Big Meadows Dam 287
Great Western Power Co.'s Transmission System 34
‡*Grip, A New Locking Feature for the Buffalo 19
†Ground Breaking World's Fair..381
*Guard for Fire-Alarm-Box Keys..107

H

†Harmonious New Year 623
‡*Harps, Trolley 88
Hawthorne, Western Electric Co.'s New Hospital at 257
‡Heany Lamp Case 175
*Heater and Purifier for Steam-Boilers, Water Feed....128
*Heater, Electric 18
‡*Heater, Electric Oil 438
*Heating Plant, University of California 193
Heat-Temperature 207
†Helping One Another 280
Hertzian Waves as Fog Signals..246
†High Frequency Tests, Application 84
High Pressure Gas Distribution..326
High Pressure Plant, A Western..401
*High Tension Direct Current Transmission 473
*High-Tension Discharge Apparatus 39
†High Tension Transmission, Studies in 85
*Highest Rock-Fill Dam in the World 519
Hongkong Oil Imports....184
*Hoop System of Delivering Orders 142
Horsepower Definition 164
‡*Hospital at Hawthorne, Western Electric Co.'s New 257
‡*Hot Plate, New Electric 438
‡*Household Generating Unit....109
*‡House Pump V-K Motor Driven..194
*How to Make up Empirical Formulas 458
*Hunting Reservoir Sites in the High Rockies 157
*Hydraulic Dredging Apparatus... 39
*Hydrocarbon Burner 233
Hydrocarbon in Illuminating Gas, Unstable 297
Hydroelectric Enterprises in Brazil 377
*Hydroelectric Power Plant, The Reconstruction of a 20,000 h.p...501

I

‡Idaho Cedarmen Adopt Standard List of Weights of Poles....504
Illuminating Engineering Society.251
Illuminating Gas, Test for Naphthalene in 486
Illuminating Gas, Unstable Hydrocarbons in 297
Illumination, Billiard Table....168
Illumination Calculators, Discussion on 78
Illumination, Factory 40
*Illumination, Methods of Calculating 4
Illumination of a Bowling Alley. 122
Illumination of Tripoli....189
*Illusion in Engineering, Optical..103
‡*Important Lighting Considerations.152
Imports of Oil at Hongkong....184
‡Improved Stencils for Electric Sign Projector 312
†Incandescent Lamps, Rating of...231
*Incandescent Lamps, Triple Rating of 221
India's Rainfall, Electric Power from 120
‡Indicating Boiler Flow Meter, New 19
*Indicators, Trolley-Switch for Station 151
Industrial Lighting 3
‡Industrial Lighting Equipment, The Last Word in 311
*Industrial Motors, Relation between Weight and Output of 351, 374
‡*Industrial Railway, A Steel Mill's.407
†Industries, New Power....230
†Industry, Trend of Electrical....255

Page

†Inland Empire 380
Inland Empire, Electrical Activity in 347
*Inland Empire, Power Possibilities in the 365
*Instrument, Surveying 87
*Internal-Combustion Engine....233
*Internal Combustion Engine, Rotary 87
International Electrical Congress at Panama-Pacific Exposition, 1915 222
‡*Inter-Phone Set, A New Metal Flush Type of 235
‡*Interphone Set, Improved Type of.361
Interurban Electric Lines in Spain 399
†Interurban Freight Traffic.... 85
†Interurban in Northwest, Proposed 536
*Interurban Rate Matters in the Northwest 292
‡*Instrument Sterilizer, The Westinghouse 438
*Investigating Department 328
Iron by Electricity, Production of Pig 146
Iron Loss in Current Transformers 373
Iron Preservative, Cement as an.253
Irrigation, Cost of Electrical....117
Irrigation Pumps, Chinese....56
†Irrigation Ventures 510
†Is it a knock or a Boost?....359
*Isolated versus Central Station Plants 179
†Isolated Plant vs. Central Station 191

J

Japan Excursion of Mining Engineers 251
Jobbers at Portland, Electrical..293
Jobbers Play Golf 513
Johns-Manville Co.'s Exhibit, H.W..384
Joint Use of Electric Line to be tried in North 253
*Jordan Steam Station 45
†Journal, Educational Value of the.190
‡*Junction Box, A New Underground Electrical ....

K

‡*Kellogg Switch Box, New....603
‡*Kelman Oil Switches and Circuit Breakers 257
*Keys, Guard for Fire-Alarm-Box.107
†Knock or a Boost, Is It a....359

L

*Labor Displacing Magnets....352
‡Lamp Case, Heany....175
*Lamp Cluster, Electric.... 61
Lamps, Annual Value of....246
†Lamps, Rating of Incandescent..231
*Lamps, The Triple Rating of....221
†Land Appraisement, New Method. 58
†Lands Necessary Amendments, Public 148
Latest Triumph of Electricity....400
†Law, The Electrolier 556
Law, Workman's Compensation.. 10
Laws, Necessary Amendments to Mineral 139
*Laws of Expansion 506
Laws of So-Called Perfect Gas...290
†Laws, Western Water 579
‡*League of California Municipalities, 14th Annual Convention and Municipal Exhibit of....469
Letter to the Editor 460
‡*Lighter, A New Electric Cigar..407
‡*Lighting a Factory Location.... 40
Lighting Agreements, Model Contract Forms for Ornamental Street 122
*Lighting, Billiard Table....168
*Lighting, Bowling Alley....122
‡*Lighting Considerations....152
‡Lighting Equipment, The Last Word in Industrial 311
Lighting, Industrial 3
*Lighting Systems, Municipal Electric 524
Lignite, The Briquetting of.... 35
Lines, Characteristics of Transmission 47
Line Protection and Right of Way.430
Line Test, Pole 426
*Loading Device 107
*Lock for Fire-Alarm Boxes 107
‡*Locking Feature for Buffalo Grip 19
‡*Locomotive of Portland, Grey & Lewiston Railway Co.'s Electric 406
Locomotives, Sacramento Division, S. P. Co., Oil Burning....368
*Long Beach Power Plant 389
Los Angeles Aqueduct Tunneling

Page

Nearly Completed 585
*Los Angeles, Clever Advertising in 509
†Los Angeles, Economic Distribution Control 465
Los Angeles Electrical Exposition, ...169, 540
Los Angeles News Letter.422, 467, 513
†Los Angeles Public Utilities Board.622
*Los Angeles, Traffic Congestion in.343
*Lubricating Oils in Small Gas Works, Device for Handling.484
Lunch for Electrical Men.....559
Lunch to Philip S. Dodd, Complimentary 461
Luncheon, A Get-Together Electrical 490

M

Machinery and Apparatus, Electrical 246
‡*Magnetic Chucks 283
*Magnets, Labor Displacing 352
Maintenance of Regulators.....487
Manila, Department of Electricity.187
Manila Gas, Franchise, Bids for.401
"Manual, Direct and Alternating Current" 493
Map of Drainage in Sierra Nevada Mountains 24
*Map of University of California..203
"McGraw Electric Railway Manual" 283
*Measurement of Water by Elbows in Pipe Line 72
*Mechanical Handling of Carbon By-Product of the Oil Gas Process 273
Medals for Conductors 183
Meeting A. I. E. E. Seattle Section.298
Meeting Notices .....
172, 192 337, 383, 405, 437, 515, 559
Meeting of Electrical Development League 580
Meeting of Electrical Men.....539
Meeting of the California Municipalities League 405
Memphis Employes, Bonuses for.142
‡*Metal Flush Type of Inter-Phone Cet 235
*Metallic Railroad Tie 87
‡Meter, New Indicating Boiler Flow 19
†Meters, Electric Gas 255
‡*Meters, New Watthour 311
‡*Meters, New Types of Switchboard 63
‡*Meters, Power Factor 129
*Meter Test, An Electric Gas....239
Meter, The Gas 271
Methods for the Small Central Station, New Business 553
Methods of Accounting in Connection With National and State Legislation 378
*Methods of Calculating Illumination 4
"Methods of Calculating Illumination," Discussion on 78
†Method of Land Appraisement, New 58
Method of Water Measurement by Use of Elbows in Pipe Line. 72
‡*Mill, Motor Driven Grain 283
Mine Production in 1910 in California 293
Mine Safety Demonstration.....222
†Mines, Electrical Section of the Bureau of 104
Mines, Electrical Section of the Bureau of—Its Purpose and Results 101
Mines of Butte, Compressed Air in 401
Mines, Some Suggestions to Prevent Electrical Accidents in....570
*Mines, Storage Battery for Goldfield 609
Mineral Laws, Necessary Amendments to 139
†Mining Company, Electric Power Anaconda 149
†Mining, Electricity in 622
383, 405, 436, 466, 538, 558, 580, 624
Mining Engineers, Japan Excursion 250
‡*Mining Service, Rotary Converters 361
Model Contract Forms for Ornamental Street Lighting Agreements 123
*‡Modern Electrical Repair Shop..492
*Modern Fire Alarm Installation..497
Moisture and Steam Calorimetry.354
‡Moisture Proof Dry Battery....130
†Montana Water Rights 381
Moth in the Great Northwest, Electricity and the Codling 206
*Motor Driven City Pumping Plant 1
‡*Motor Driven Grain Mill.....283
‡*Motor Driven House Pump, V-K.194
Motors, Annual Value of 246

Page

*Motors, Relation Between Weight and Output of Industrial 374
‡*Motors, Shunting vs. Bridging of Railway 108
‡Mound House Plaster Co.....514
‡*Multi-Differential Arch Type of Cellular Dam 603
*Municipal Electric Lighting Systems 524
Municipal Purchase of Seattle, Renton & Southern Railway Co..147
†Municipal vs. State-Wide Control.435
Municipalities League Meeting, California 405

N

Naphthalene in Illuminating Gas, Test for 486
*Naphthalene Problem in Oil Gas Manufacture and Distribution..294
Navigation Through the Suez Canal 400
Necessary Amendments to Mineral Laws 139
Exhibit at Los Angeles Electrical Exposition 512
"New Business" Methods for the Small Central Station.....553
New Catalogues .....
20, 60, 86, 109, 127, 130, 195, 216, 232, 256, 312, 362, 405, 437, 469, 491, 542, 581.
†New Power Industrial 230
News Letter from Los Angeles, ...467, 513
News Notes .....
20, 42, 65, 89, 110, 131, 154, 176, 196, 217, 236, 258, 284, 313, 339, 363, 386, 408, 440, 470, 494, 516, 543, 562, 606.
‡Newspaper Plant, Electric Equipments in a 439
‡*New Types of Switchboard Meters. 63
Nile Sudd as Fuel.....401
Northern California, Electrical Activity in 229
*Northern California Power Co.'s Coleman Plant 411
*Northern Electric, Train Despatching on the 69
*Northwest, Breaking of Snow-Blockades in 505
Northwest Electric Light & Power Association Convention 78, 322
*Northwest, Interurban Rate Matters in the 292
†Northwest, Proposed Interurban in 536
Northwest, Water Rights in....378
†Nuisance, Smelter Smoke.....171

O

*Oakland Pumping Plant, Motor Driven 1
Obituary .....
.....383, 405, 436, 466, 538, 558, 580
Oil and Petroleum Industry in Canada Fuel 147
*Oil-Burner 107, 233
*Oil-Burner, Crude 18
*Oil Burning 563, 588
*Oil Burning 563, 588, 613
Oil Burning Locomotives, Sacramento Division, S. P. Co.....368
Oil Engines for Ships.....187
Oil Entries, Fraudulent 222
*Oil Gas Manufacture and Distribution, The Naphthalene Problem in 294
*Oil Gas Process, Mechanical Handling of Carbon By-Product...273
‡*Oil Heater, Electric 438
Oil Imports at Hongkong 184
Oil Industry in California.....206
Oil Investigations of U. S.....551
†Oil, Origin of 600
*Oil, Process of Refining.....128
†Oil Production, Electricity in ...622
Oil Production in 1909 400
Oil Pumping, Cost of Electric..568
Oil Specifications for 146
Oil Storage at Portland 617
‡*Oil Switches and Circuit Breakers, Kelman 257
*Oil Wells, Packer for Operating..193
*Oil Wells, Pump for.....107
Opportunities with Foreign Neighbors, Engineering.....210, 213
*Optical Illusion in Engineering...103
Oregon Contractors Organize.....559
*Oregon Power Co. 545
†Origin of Oil 600
Ornamental Street Lighting Agreements, Model Contract Forms for.122
*Orders, Hoop System of Delivering 142
‡Outdoor Service, Telephone Protector for 174
*Output and Weight of Industrial Motors, Relation Between..351,374

P

Pacific Coast Gas Association, Nineteenth Convention 268
*Pacific Coast Gas Association Wrinkles 484
†Pacific Coast Conventions 254
Pacific Coast Gas Association....220
‡Pacific Coast, Progress of the Western Electric on the 88
Pacific Northwest Special Correspondence from the 513
*Packer for Operating Gas, Water and Oil Wells 193
Panama Canal, Progress and Interest in 100
Panama, Cost of Concrete at..... 31
Panama, Erosion of Culebra Cut. 46
†Panama-Pacific Exposition, Transportation Facilities 124
*Panama-Pacific International Exposition, Electrical Features...261
Panama-Pacific Transportation Facilities 113
Panama-Pacific International Electrical Congress 222
Panama Trip, Proposed 457
*Particles, The Electrical Precipitation of Suspended 165
Patents .....
18, 39, 61, 87, 107, 128, 151, 173, 193, 233.
†Patent Reports 125
Patents, Annual Report—Commissioner of 117
†P. A. Y. E. Cars..... 36
‡*Pennsylvania Ry. Tunnel, Ventilation 234
Personals .....
17, 38, 60, 86, 106, 126, 150, 172, 192, 214, 232, 256, 282, 310, 336, 360, 382, 404, 436, 466, 490, 510, 538, 558, 580, 602.
†Petroleum, Crude 212
Petroleum Production, Crude 569
Petroleum Industry in Canada, Fuel Oil and 147
Philippine Electric Line 246
Philippine Franchise at Public Auction 183
*Photo-Exposure Apparatus, Electropneumatic 193
Pig Iron by Electricity, Production of 146
*Pipe Line, Water Measurement by Use of Elbows in 72
†Pipes, Surge 16
*Plants, Isolated versus Central Station 179
*Plant, University of California, Heating 199
Plant Valuations 549
†Plant Visitation, Power..... 402
‡*Plate, New Electric Hot 438
‡*Plug Switches, Improved.....515
‡*Pneumatically Operated Disconnecting Switches 40
*Polarity in Polyphase Current Circuits 447
Pole-Line Test 426
Poles, Idaho Cedarmen Adopt Standard List of Weights.....504
Poles, Preservation of.....293
Poles, Test of Western Cedar....552
*Polyphase Current Circuits, Polarity in 447
†Polytechnic Institute, Throop....280
Portland, Electrical Jobbers at...293
Portland, Railroad Dinner at..559
Portland Makes Arrangements for Oil Storage 617
*Post-Hole Excavator, Power Driven 193
†Power, Anaconda Mining Company, Electric 149
Power and Fuel in Arizona, Cencus Returns for 229
Power Development in Austria-Hungary, Water 252
*Power Device, Tidal 151
*Power-Driven Post-Hole Excavator 193
‡*Power Factor Meters 129
Power from India's Rainfall, Electric 120
†Power Industries, New 230
*Power Plant, Long Beach.....389
†Power Plant Visitation 402
*Power Possibilities in the Inland Empire 365
Power Rates for Pumping 401
†Power Rivalry, Western 170
"Practical Applied Electricity"....100
*Precipitation and Altitude in the Sierras 23
*Precipitation of Suspended Particles, Electrical 165
Preservation of Poles 293
Preservative, Cement as an Iron.253
President's Address, Pacific Coast Gas Association 269
*Presidio Hospital Fire Alarm System 141

Page

*Press, Fuel 128
*Pressure of Wind on Small Wires. 95
Primer of Applied Thermodynamics 207, 225, 248, 265, 290, 329, 354, 375, 396, 423, 458, 480, 506, 530.
Prize for Electric Safety Lamp..206
*Process of Refining Oil.....128
Production of Crude Petroleum..569
Production of Pig Iron by Electricity 146, 400
Progress and Intense Interest in Panama Canal 100
‡Progress of the Western Electric Co. on the Pacific Coast.... 88
Properties and Use of Douglas Fir 32
†Proposed Interurban in Northwest 536
Protection, Right of Way and Line 430
‡*Protective Results Accomplished by Arcing Rings 384
‡Protector for Outdoor Service, Telephone 174
*Protractor, and Rule, Combined Bevel 39
†Public Be Pleased 622
Public Control of Public Utilities 571
†Public Land Titles 148
†Public Operation of Public Utilities, Danger of 578
Public-Road Building in Canadian Rockies 189
Public Service Commissions 369
Public Service Commissions, Discussion on 430
†Public Service Commission, California 557
Public Service Conditions at Seattle 617
†Public Service Corporation Man's Attitude 308
†Public Utilities Board, Los Angeles 622
Public Work and Engineering..460
†Puget Sound Rate Case 308
*Pump 61, 173
*Pump for Oil Wells.....107
Pumping, Cost of Electric Oil....568
*Pumping Plant, A Motor Driven City 1
*Pumping Plants, Cost per Acre Foot of Electrically Driven....117
Pumping, Power Rates for.....401
Pumps, Chinese Irrigation..... 56
‡*Pump, V-K Motor Driven House.194
Purchase of Seattle, Renton & Southern Railway Co. Municipal 147
*Purifier for Steam Boilers, Water Feed, Heaters and 128
*Purifier, Gas 173

Q

Quick Checks for Engineering Computations 184

R

Railroad Dinner at Portland.....559
‡*Railroad, Gas-Electric Car for San Francisco 174
*Railroad Spike 173
*Railroad Tie, Metallic 87
*Railway Cattle-Guard Causeway..173
*‡Railway Motors, Shunting vs. Bridging of 108
Railway Statistics, American.....253
Rainfall, Electric Power from India's 120
*Rankine Cycle and Entropy Tables 530
†Rate Case, Puget Sound 309
†Rate Fixing 536
*Rate Matters in the Northwest, Interurban 292
†Rate Reductions, As to..... 84
Rates for Gas Service 276,301
Rates for Pumping, Power 401
†Rating of Incandescent Lamps..231
Reclamation Service, Work of....401
†Recognition of the Engineer....557
*Reconstruction of a 20,000 h.p. Hydroelectric Power Plant....501
Red Cedar, Western 187
†Reductions, As to Rate..... 84
Redwood 143
*Refining Oil, Process of.....128
Regulation for Oil Storage at Portland 617
‡*Regulator for Automatically Varying the Speed of Two Motors, New 514
Regulators, Maintenance of 487
*Relation Between Weight and Output of Iudustrial Motors ..351, 374
*Removal of a Tank 487
‡*Repair Shop, A Modern Electrical.492
†Reply to Richard T. Crane.....537
Report—Commissioner of Patents, Annual 117
†Reports, Patent 125
*Reservoir Sites in the High Rockies, Hunting 157
Responsibility of Electrical Engineers in Making Appraisals 11
‡Restoration of Telephone Service in 98 hours 561
Reviews, Book 100, 130, 283, 337, 383, 493
Right of Way and Line Protection 430
†Rivalry, Western Power 170
Road Building in Canadian Rockies, Public 189
†Roads Activity, Good 170
†Roads, A Word on Good.....488
*Rock-Crusher 87
*Rock-Fill Dam, Highest 519
‡*Rotary Converters for Mining Service 361
‡*Rotary Converters, 3000 Kilowatt.542
*Rotary Engine 193
*Rotary Internal-Combustion, Engine 87
Rubber Covered Wire, Specifications for 29
*Rule, Combined Bevel, Protractor and 39
Rules, Standard Boiler 504

S

Safety Demonstration, Mine.....222
Safety Lamp, Prize for Electric..206
Sags in Transmission Lines, Calculators 49
‡*San Francisco Railroad, Gas-Electric Car for 174
San Francisco Section, A. I. E. E.. .....368, 501
†San Francisco, Traffic Expert for.230
Schools, Futility of Technical ...533
Seattle, Joint Use of Railroad at..253
Seattle Public Service Conditions..617
Seattle, Renton & Southern Railway Co., Municipal Purchase of.147
Seattle Section Meeting A. I. E. E.293
*Seawall or Wharf Construction .. 61
‡*Selectively Operated Semaphore and Telephone Equipment 62
‡*Semaphore and Telephone Equipment, Selectively Operated 62
Service, Advertising Gas and Electric 346
Service, Rates for Gas 276, 301
Ships, Oil Engines for 187
*Short-Cut in Estimating Excavation of Yardage in Ditch Construction 222
*Shovel for Ditching, Steam 31
‡*Shunting versus Bridging of Railway Motors 108
*Sierras, Precipitation and Altitude in the 23
Signals, Use of Hertzian Waves as Fog 246
‡Sign Projector, Improved Stencils for the Electric 312
Single Phase System for Railroad Electrification, Swiss 229
†Site Exposition 58
*Simple Laws of Expansion 506
*Slide Valve and Zeuner Diagram.618
†Smelter Smoke Nuisance 171
Smelting, Electric Zinc 612
†Smoke Nuisance, Smelter 171
†Smoke Ordinance 622
*Snow Blockades in Northwest, Breaking of 505
‡Soldering Iron, Calorized Electric.561
†Some Simple Arithmetic 489
South American Electric Line and Development 429
*Southern California, Electrical Activity in 224
Spain, Interurban Electric Lines in.399
Specification for Rubber Covered Wire 29
Specifications for Purchase of Fuel Oil by Bureau of Mines 146
*Spike, Railroad 173
*Spokane, Electrical Activities in..445
Standard Boiler Rules 504
Standard List of Weights of Poles, Idaho Cedarmen Adopt 504
*Starting System for Gas-Engines.173
State Railroad Electrification, Swiss 229
†Statewide vs. Municipal Control ..435
"Static Transformers, The Design of" 493
*Station-Indicators, Trolley-Switch for 151
Statistics, American Railway....253
*Statistics, Gathering 358
Statistics on Gas, Illuminating and Heating, Census 509
*Steam Boilers, Water-Feed, Heater and Purifier for 128
Steam Calorimetry and Moisture..354
*Steam Equipment of Long Beach Power Plant 389
*Steam-Generator 233
*Steam Station, Jordan 45
*Steam Shovel for Ditching 31
*Steam, United Railroad's Abandonment of 135
‡*Steel Mill's Industrial Railway ..407
‡Stencils for the Electric Sign Projector, Improved 312
‡*Sterilizer, The Westinghouse Instrument 438
Storage of Oil at Portland 617
492, 515, 539, 559, 581, 604, 624
"Straight Line Engineering Diagrams" 130
Streams and the Factors That Modify Their Flow 13
Street Lighting Agreements, Model Contract Forms for Ornamental.122
*Structure, Culvert 87
†Struggle, A City's Traffic.....281
†Studies in High-Tension Transmission 85
Sudd as Fuel, Nile 401
Suez Canal, Navigation Through the 400
†Surge Pipes 16
Surges in Water Conduits, On the Control of 9
*Surveying Instrument 87
*Suspended Particles, The Electrical Precipitation of 165
Swiss Single Phase System for Railroad Electrification 229
Switchboards, Annual Value of...246
‡*Switchboard Meters, New Types of. 63
‡*Switch Box, New Kellogg 603
‡Switch, Cutler-Hammer Feed-Through 561
‡*Switches, Improved Plug 515
‡* Switches and Circuit Breakers, Kelman Oil 257
‡* Switches, Pneumatically Operated Disconnecting 40
*Switch for Station Indicators, Trolley 151
*System of Delivering Orders, Hoop.142
*System of Electrical Distribution. 61
*System, Telephone 128

T

*Table Lighting, Billiard.....168
*Tank Removal 487
*T-Bolts for Holder Patches, Split.484
†Teaching, Engineer's Relation to.. 59
†Technical Editors' Community of Spirit 148
Technical Schools, Futility of 533
†Technical Writing 191
Telegraph Extension in China ... 34
‡*Telephone Equipment, Selectively Operated Semaphore and 62
‡Telephone Protector for Outdoor Service 174
Telephones, Annual Value of.....246
‡Telephone Service Restored in 98 Hours 561
‡*Telephone Sets, Composite 194
*Telephone System 128
Telephone Train Dispatching in British Columbia 183
Telephone Train Dispatching on Northern Electric 69
"Telephony and Telegraphy, Cyclopedia" 383
Temperature—Heat 207
*Tension Discharge Apparatus, High 39
*Test, An Electric Gas Meter.....239
Test for Naphthalene in Illuminating Gas 486
"Testing of Electrical Machinery".493
"Testing of Electro-Magnetic Machinery and Other Apparatus"..130
*Test of Fire Alarm System 141
†Tests, Application High Frequency 84
*Tests on a Water Tube Boiler, Evaporative 315
Test of Western Cedar Poles 552
Test, Pole-Line 426
*Theater, Electricity in the Cort..584
Thermodynamics, Primer of Applied..207, 225, 248, 265, 290, 329 354, 375, 396, 423, 458, 480, 506, 530
Thermometers and Calorimetry ..225
†Thesis, College Engineering 125
"Three-Phase Transmission" 100
*Throop Polytechnic Institute, Pasadena, California 279
Throop Scholarships 553
*Ticket, Transfer 18
*Tidal-Power Device 151
*Tie, Metallic Railroad 87
Tokyo, New Electric Company in..426
Trade Notes..17, 20, 38, 60, 86, 88, 108 127, 153, 175, 195, 214, 215, 232, 256 283, 310, 327, 361, 383, 405, 439, 467 492, 515, 539, 559, 581, 604
*Traffic Congestion in Los Angeles.343

Page

†Traffic Expert for San Francisco.230
†Traffic of the Interurban, Freight. 85
†Traffic Struggle, A City's 281
*Train Dispatching on the Northern Electric 69
Train Dispatching by Telephone in British Columbia 183
*Transfer-Ticket 18
Transformers, Annual Value of...246
Transformers, Iron Loss in Current 373
‡*Transformers, Recent Improvements in Distributing 234
"Transformers, The Design of Static" 493
‡*Transformers, 14,000 k.v.a. 215
"Transmission Engineering, Electric Traction 383
*Transmission, High Tension Direct Current 473
‡*Transmission Line Calculator, Alternating Current 152
†Transmission Line Charts 58
Transmission Lines, Characteristics of 47
‡*Transmission Lines, Protective Results Accomplished by Arcing Rings on 384
†Transmission, Studies in High Tension 85
Transmission System of the Great Falls Power Co..... 55
Transmission System of the Great Western Power Company 34
"Transmission, Three Phase".....100
*Transportation Facilities, Exposition Site .....
†Transportation Facilities Panama-Pacific Exposition 124
Transportation Record in Culebra Cut 251
*Treadmill for Automobiles, A 485
†Trend of the Electrical Industry.255
*Triple Rating of Incandescent Lamps 221
Tripoli, Illumination of 189
‡*Trolley Harps 88
*Trolley-Switch for Station Indicators 151
†Trouble, A Clearing House for 510
‡*Tunnel Ventilation of the Pennsylvania Railway Co. 234
*Turbine Water-Wheel 39
†Turning the Leaf 623

U .....

‡*Underground Electrical Junction Box, A New 604
Unexplored Fields in Electrical Engineering 57
*United Railroads' Abandonment of Steam 135
United States, Commercial Woods of the 401
United States Oil Investigations..551
‡*Unit, New Household Generating..109
*University of California, Heating Plant 199
Unstable Hydrocarbons in Illuminating Gas 297
U. S. Bureau of Mines, Demonstrations of 248
Uses of Douglas Fir 32
*Utah Light & Ry. Co. Power Station 45
Utilities, Public Control of Public 571

V

Valuations, Plant 549
†Value of the Journal, Educational.190
*Valve, Balanced 193
*Valve, Plain Slide 618
†Vector Diagrams 464
‡*Ventilation Pennsylvania Railway Tunnel 234
†Ventures, Irrigation 510
Vessels, Compulsory Wireless for 9
Victoria Falls, Generating Plants at 294
†Visitation, Power Plant 402
‡*V-K Motor 194

W

"Walker's Manual" 130
Washington's Workman's Compensation Act 10
*Water and Oil Wells, Packer for Operating 193
Water Conduits, On the Control of Surges in 9
*Water-Feed, Heater and Purifier for Steam Boilers 128
†Water Laws, Western 579
*Water Measurement by Use of Elbows in Pipe Line 72
Water-Power Development in Austria-Hungary 252
Water Rights in Northwest 378
†Water Rights of Montana 381
†Watershed Data 37
*Water-Tube Boiler 18
*Water-Tube Boiler, Evaporative Tests 315
*Water-Wheel, Turbine 39
‡*Watthour Meters, New 311
Weather-Proofed Electric Cable for China 30
*Weight and Output of Industrial Motors, Relation Between..351, 374
*Wells, Pump for Oil 107
Western Cedar Poles, Tests of....552
‡Western Electric Co.....406, 515, 605
Western Electric Co.'s New Hospital at Hawthorne 257
‡Western Electric Progress on the Pacific Coast 88
†Western Enterprise 36
Western High Pressure Plant ...401
†Western Power Rivalry 170
Western Red Cedar 187
†Western Water Laws 579
‡*Westinghouse Electric Chafing Dishes and Frying Pans 581
‡Westinghouse Elec. & Mfg. Co., Annual Meeting of.....175
‡Westinghouse Elec. & Mfg. Co., Progress in 1911 605
‡Westinghouse Exhibit at Atlantic City 439
‡*Westinghouse Instrument Sterilizer 438
Westinghouse Machinery Co. Progress 1911 626
*West Jersey & Seashore Railroad, Electrical Operation 184
*Wharf Construction, Seawall or.. 61
What Every Engineer Should Know 462
*Wheel, Turbine Water 39
†Where to Buy It in the West....402
‡Why California Isn't Alarmed 561
*Windmill 151
*Wind Pressure on Small Wires, Experiments on Increase 95
Wireless for Vessels, Compulsory 9
Wireless Telegraph Station at Coltano 587
*Wires, Experiments on Increase of Wind Pressure on Small..... 95
Wire, Specifications for Rubber-Covered 29
Woods of the United States, Commercial 401
†Word on Good Roads, A 488
†World's Fair, Ground Breaking ..381
†Workman's Accident Compensation 37
Workman's Compensation Act for Washington 10
Work of Reclamation Service 401
†Writing, Technical 191

Z

*Zeuner Diagram 618
Zinc Smelting, Electric 612